

# California High-Speed Train Project



California High-Speed Train Project Los Angeles to Anaheim Project EIR/EIS



## Supplemental AA Report: Technical Update on Shared-Track Alternative

July 8, 2010

# Update to Shared-Track Alternative



California High-Speed Train Project Los Angeles to Anaheim Project EIR/EIS



- Objectives
  - Consolidate/Rationalize Operations
  - BNSF Maintains Customer Access
  - Reduce Right of Way Impacts
  - Reduce Construction Costs



Source: STV Incorporated, AE LLC





June 8, 2010

California High-Speed Train Alternatives Analysis Report

### Legend



### Key Constraint

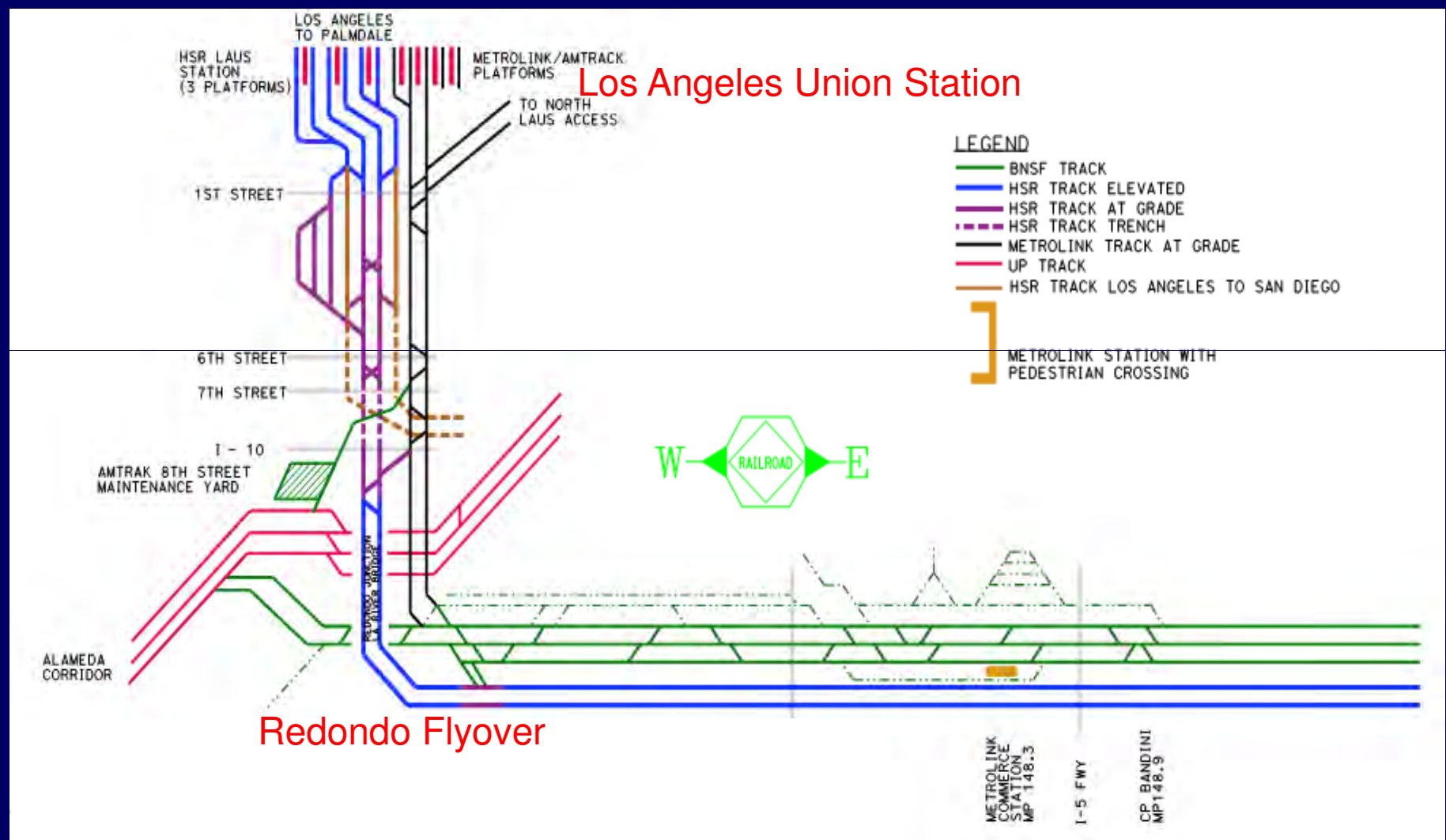
 Corridor     Railroads  
 Freeway     Arterials

### Los Angeles to Anaheim - Key Subsections with Constraints

# Update to Shared-Track Alternative



California High-Speed Train Project Los Angeles to Anaheim Project EIR/EIS

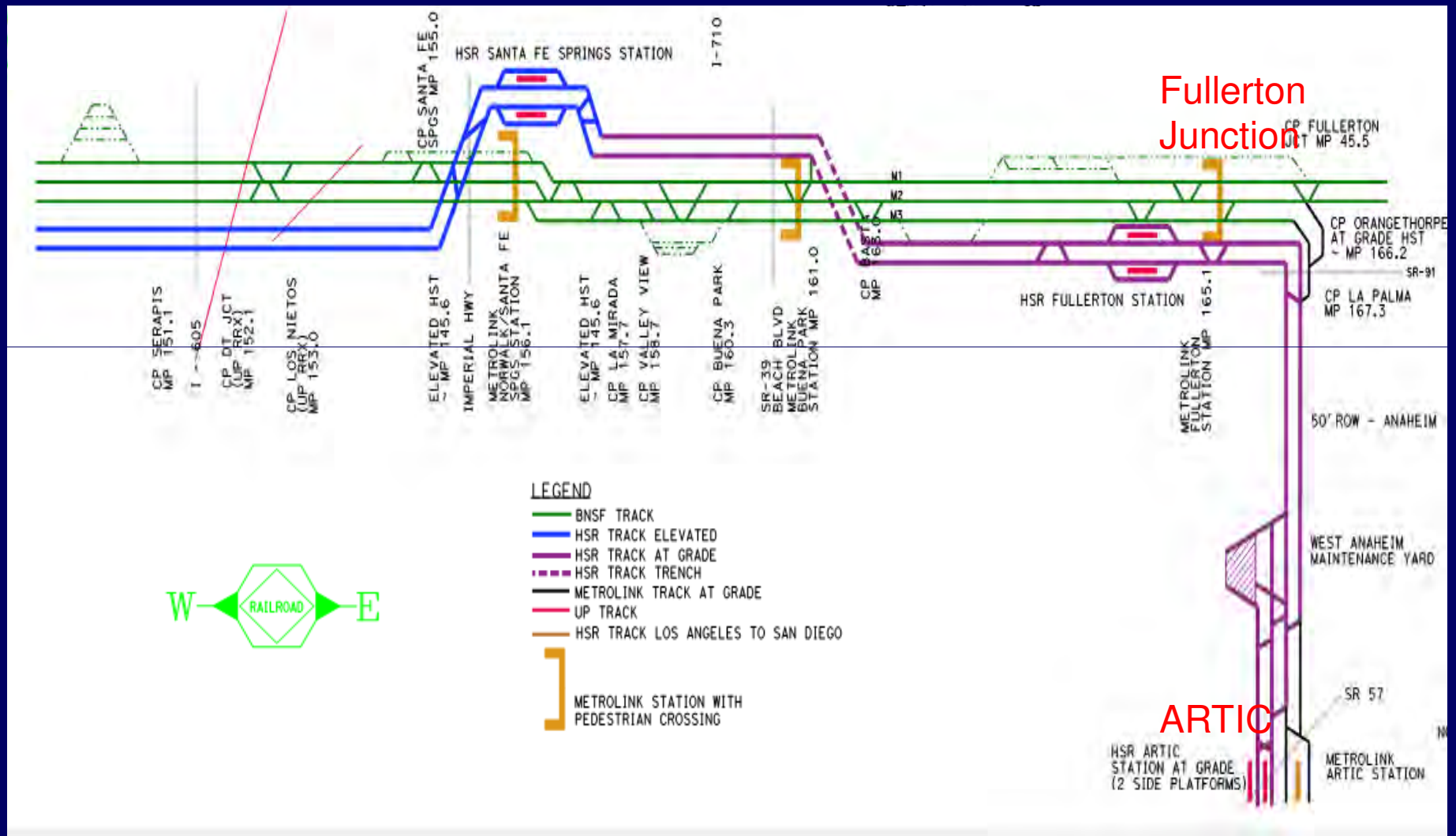


# Update to Shared-Track Alternative



California High-Speed Train Project

Los Angeles to Anaheim Project EIR/EIS



# Update to Shared-Track Alternative



California High-Speed Train Project **Los Angeles to Anaheim Project EIR/EIS**



## Options Examined for the Shared-Track Alternative

# Technical Outreach



California High-Speed Train Project Los Angeles to Anaheim Project EIR/EIS



- **Corridor Cities**
  - 175 briefings, council workshops and community meetings
- **Gateway Cities Technical Working Group - 5**
- **Gateway Cities Administrative Committee - 2**
- **Interagency Working Groups - 6**
- **OC City Managers - 3**
- **Scoping Meetings 3**
- **Stakeholder Working Groups - 2**

# Stakeholder Outreach



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- **Since 2007, more than 400 presentations and briefings reaching stakeholders:**
  - **Elected Officials**
  - **Chambers of Commerce**
  - **Neighborhood Councils / Homeowners Associations**
  - **Community and Business Organizations**
  - **Trade Organizations**
  - **Environmental Justice Groups**

# Los Angeles Union Station



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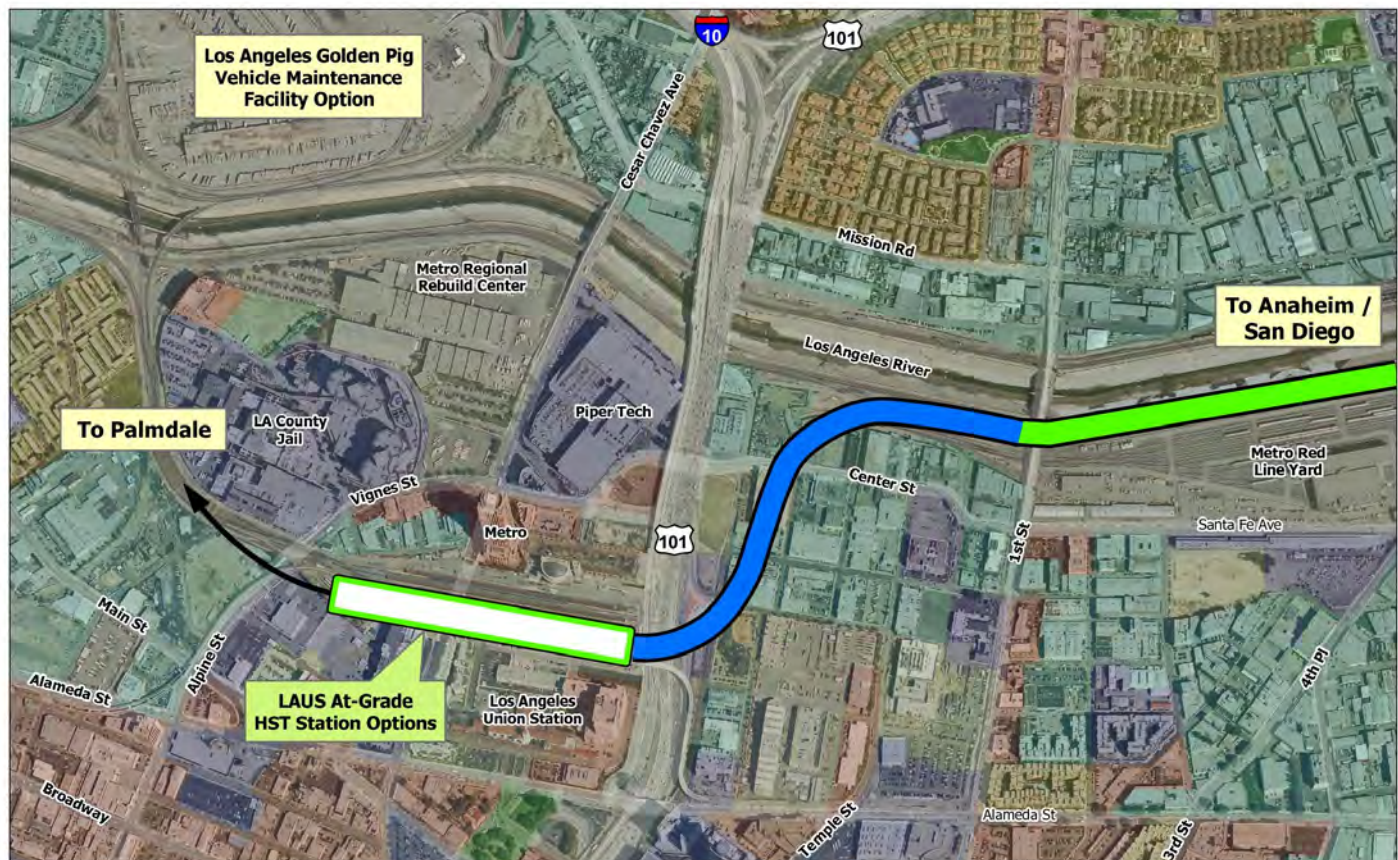


- Options Examined for LAUS with City:
  - LAUS Aerial HST Station
  - LAUS At-Grade HST Station (NEW)
  - LAUS Deep Tunnel HST Station
  - West Bank Trench HST Station
  - Vignes Aerial HST Station (NEW)
- Recommended to Carry Forward:
  - LAUS Aerial HST Station
  - LAUS At-Grade HST Station

# At Grade Los Angeles Union Station



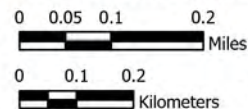
California High-Speed Train Project Los Angeles to Anaheim Project EIR/EIS



Source: STV Incorporated, AE LLC

June 3, 2010  
Legend

California High-Speed Train Alternatives Analysis Report



## Vertical Profile

- At-Grade
- Aerial
- Fill
- Trench
- Tunnel (Cut & Cover)
- Tunnel (Bored)

## Land Uses

- Low Density Residential
- Medium / High Density Residential
- Commercial
- Industrial
- Extraction
- Public Facilities / Institutions
- Transportation / Utilities
- Military Installations
- Mixed Use
- Open Space / Recreation
- Agriculture
- Water / Floodways
- Vacant

**Los Angeles Station  
Consolidated Shared-Track - Overview**

# LAUS to Redondo Flyover

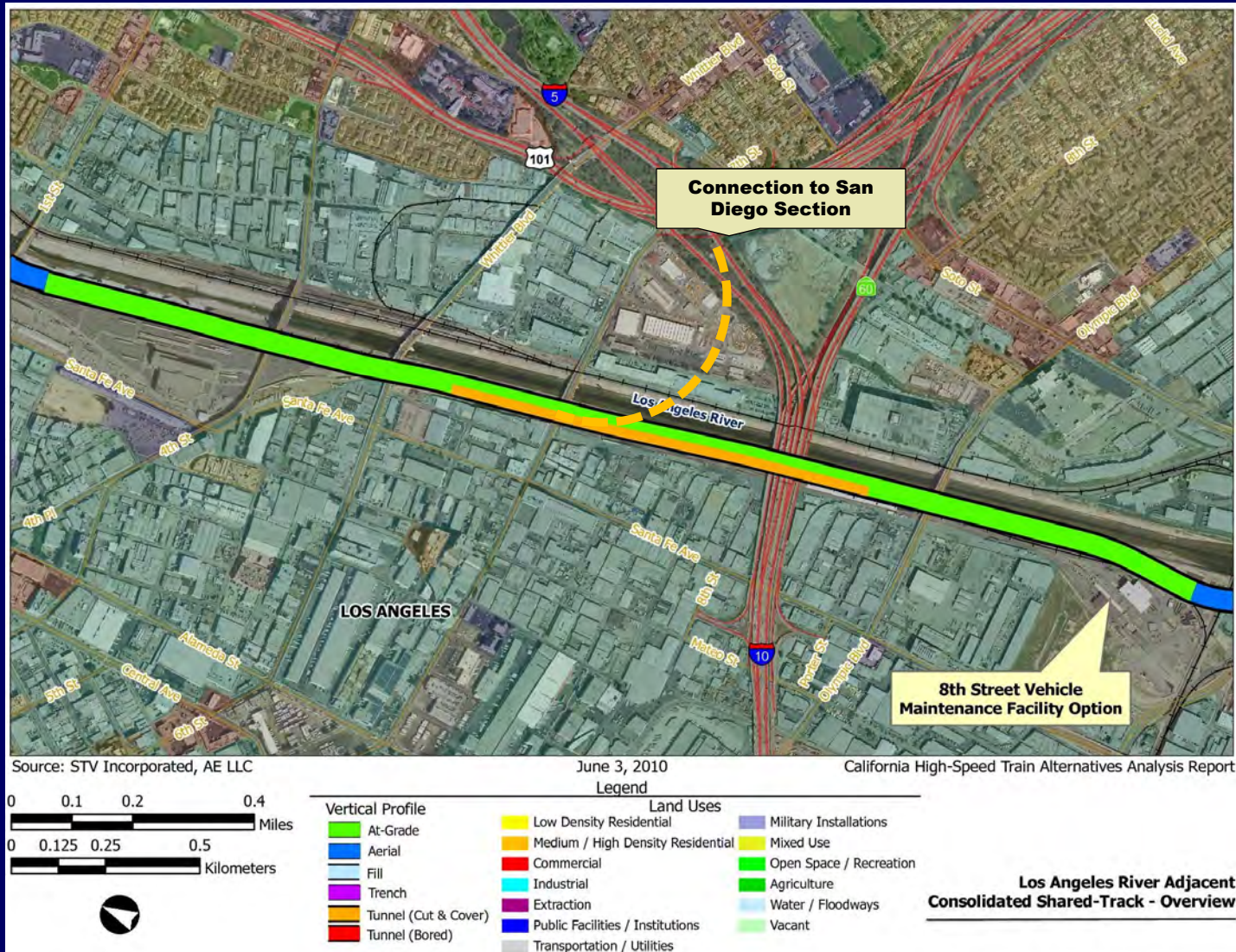


California High-Speed Train Project

Los Angeles to Anaheim Project EIR/EIS



- Options Examined
  - Under First Street
  - Aerial and Tunnel connections for San Diego
  - Storage Tracks for HST
  - Dedicated HST Tracks from Redondo Flyover to LAUS
  - Utilize Metrolink Redondo Flyover Bridge
  - Connection for Amtrak to their 8<sup>th</sup> Street Yard
  - Retain full function of Redline Yard
  - Reduce impacts to road bridges in area
- Recommended to Carry Forward:
  - Under first Street with flexible connection to San Diego



# Update to Shared-Track Alternative



California High-Speed Train Project Los Angeles to Anaheim Project EIR/EIS

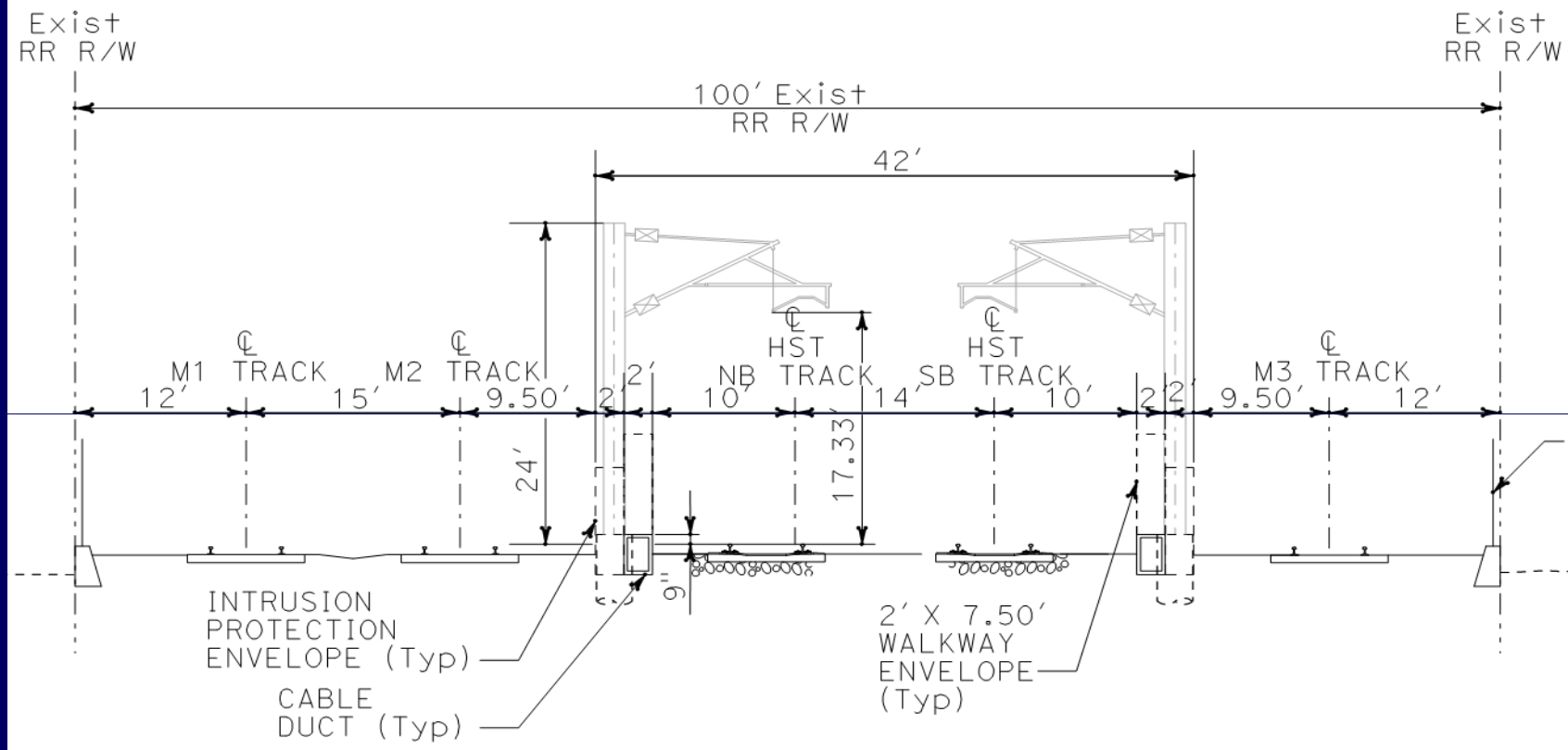


- Redondo Flyover to Fullerton:
  - Requires five tracks between
    - 2 Passenger Tracks
      - HST and Metrolink (OC) / Amtrak (San Diego)
    - 3 Freight Tracks
      - BNSF and Metrolink (91) / Amtrak (Long distance)
  - Track arrangement developed in coordination with local cities
    - Operational considerations
    - Technical Criteria
    - Minimize ROW impacts
    - Working sessions examined issues at City level
    - Transition from City to City requires close coordination and agreement on alignment

# Update to Shared-Track Alternative



California High-Speed Train Project Los Angeles to Anaheim Project EIR/EIS

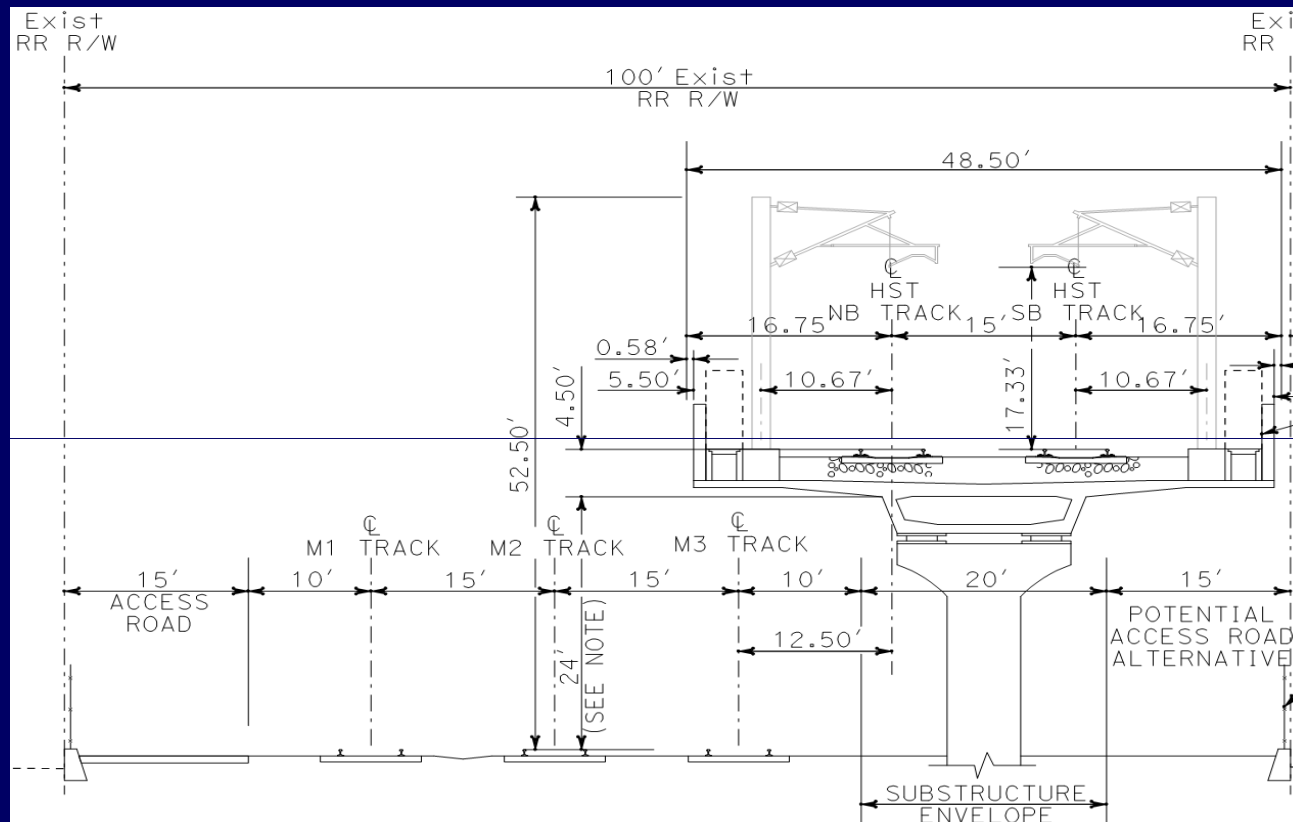


- Initial Concept – safety, operational , access and constructability issues
- BNSF rejected

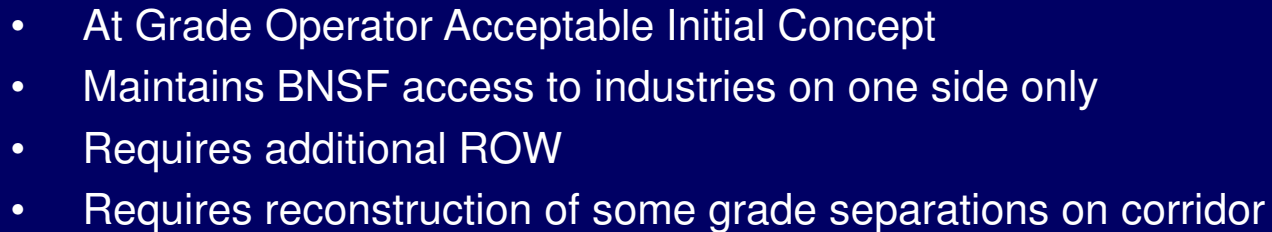
# Update to Shared-Track Alternative



California High-Speed Train Project Los Angeles to Anaheim Project EIR/EIS



- Operator Acceptable Concept
- Maintains BNSF access to industries on either side
- Stays within ROW but requires viaducts through cities
- Eliminates most reconstruction of grade separations



# Redondo Flyover to Fullerton Junction



California High-Speed Train Project

Los Angeles to Anaheim Project EIR/EIS



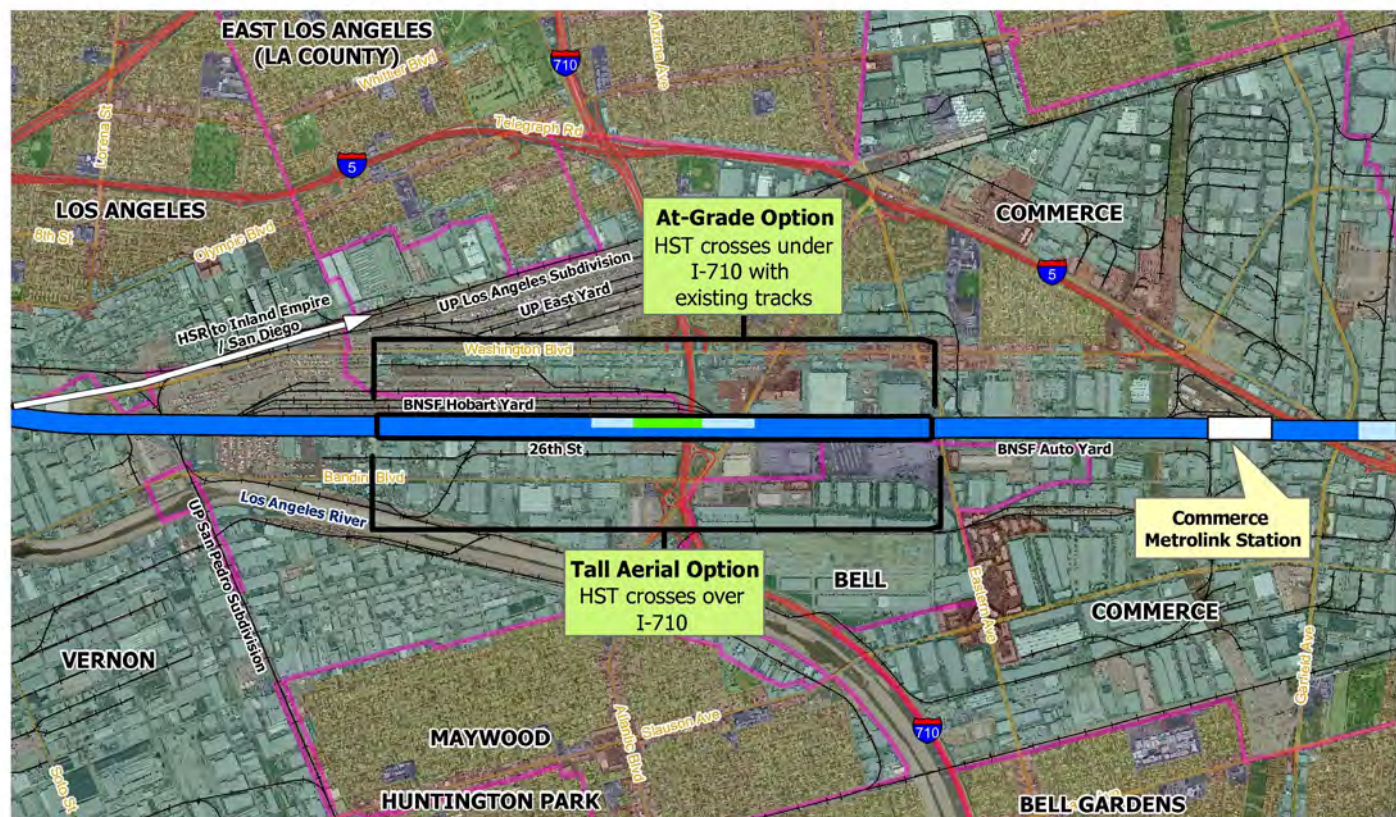
- Options Examined with Cities
  - Vernon - Aerial Structure on south side of BNSF
    - Reduce ROW acquisition and impacts to City improvements
    - Integrate new I-710 designs
  - Commerce - Aerial Structure on south side of BNSF
    - Reduce ROW acquisition
    - Avoid Metrolink Station
    - Avoid Home Depot
  - Montebello - Aerial Structure on south side of BNSF
    - City recently indicated desire to be at grade
    - BNSF wants to retain access to industrial tracks
    - Transition from Commerce to Pico Rivera aerial alignment

# Redondo Flyover to Fullerton Junction



California High-Speed Train Project

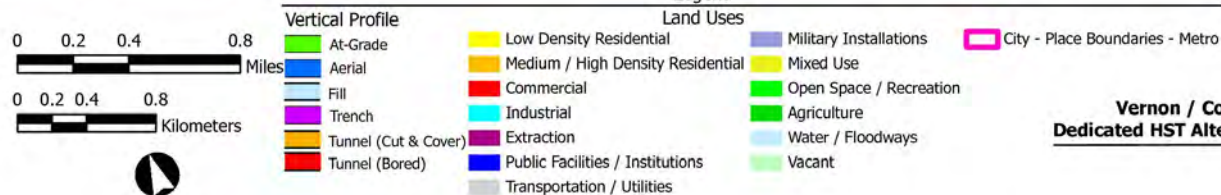
Los Angeles to Anaheim Project EIR/EIS



Source: STV Incorporated, AE LLC

January 29, 2010  
Legend

California High-Speed Train Alternatives Analysis Report



**Vernon / Commerce Rail Yards  
Dedicated HST Alternative - Overview**

# Redondo Flyover to Fullerton Junction



California High-Speed Train Project

Los Angeles to Anaheim Project EIR/EIS

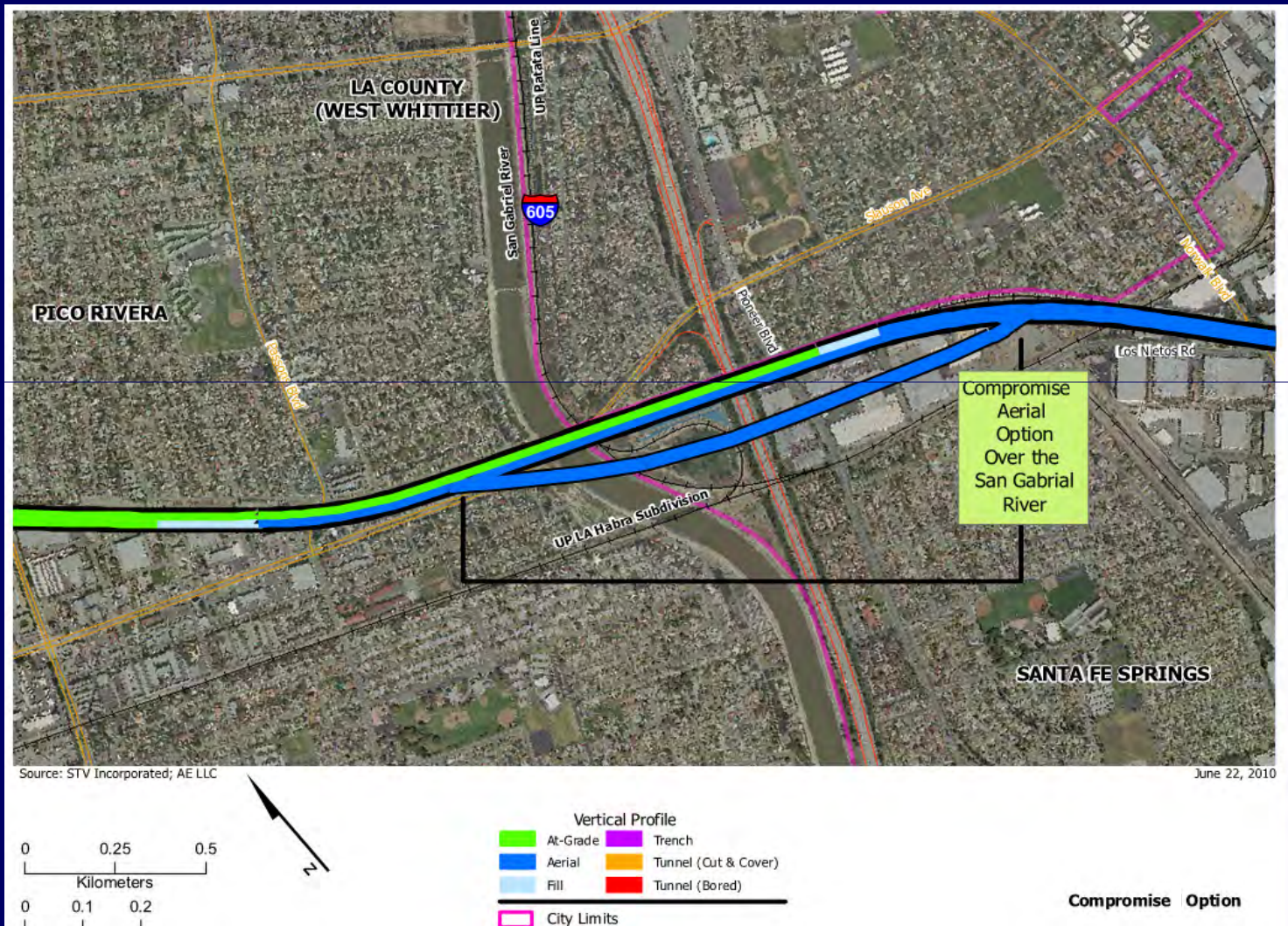


- Options Examined with Cities
  - Pico Rivera - Aerial Structure on south side of BNSF
    - Avoid residential takes on south side by reconfiguring BNSF Yard
    - Grade Separation assistance
    - Cross over Slauson Avenue across San Gabriel
  - Unincorporated LA County (Whittier) - Aerial Structure on south side of BNSF
    - San Gabriel River crossing
    - I-605 Crossing
    - UPRR Patata and La Habra Subs cross at grade

# Redondo Flyover to Fullerton Junction



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# Redondo Flyover to Fullerton Junction



California High-Speed Train Project Los Angeles to Anaheim Project EIR/EIS

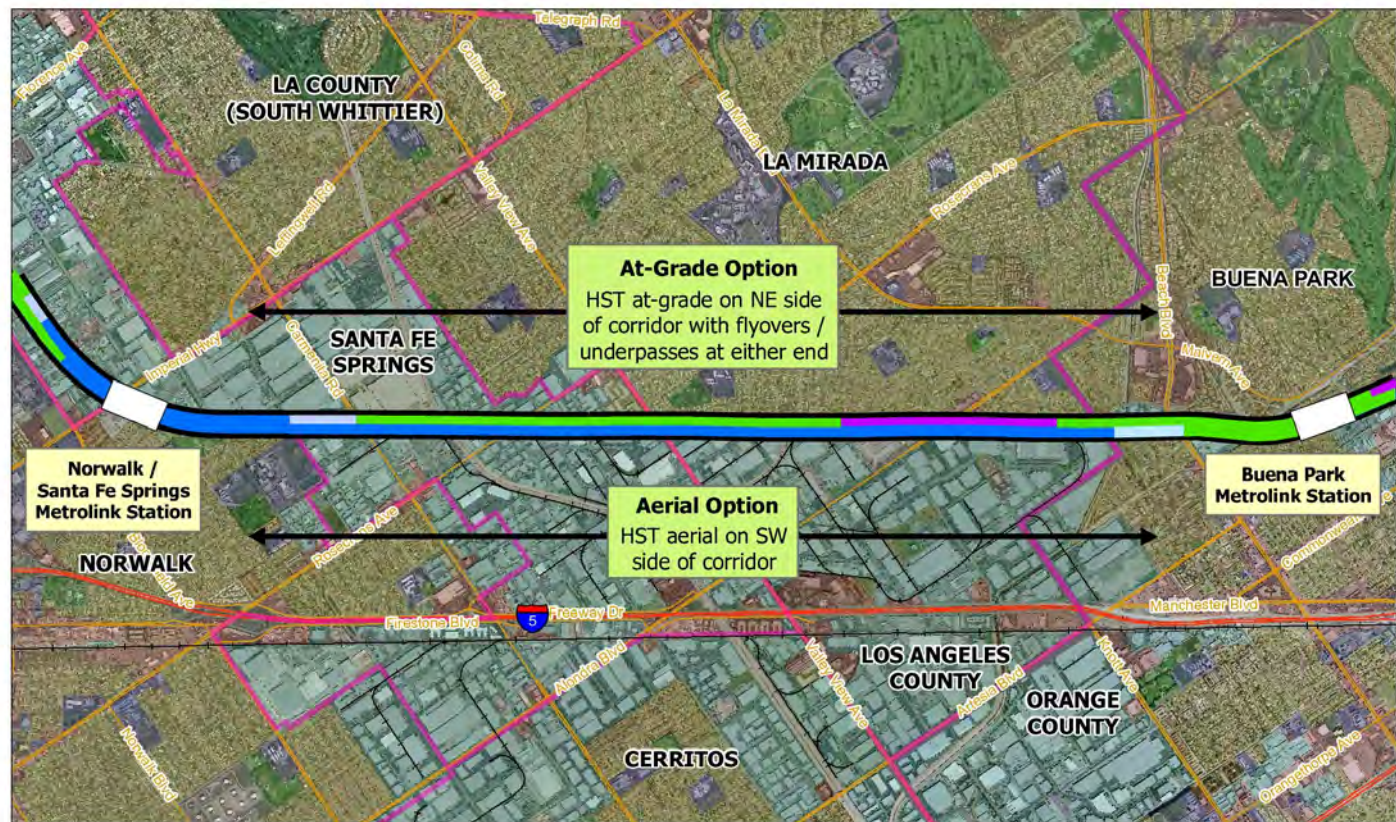


- Options Examined with Cities
  - Santa Fe Springs - Aerial Structure on south side of BNSF crossing over at Imperial Hwy
    - Redevelopment potential along Enterprise
    - ROW impacts reduced
    - East HST Station (Aerial/Fill) connected to Metrolink station
    - No HST Station
    - At grade east of Valley View
  - La Mirada – At Grade on north side of BNSF
    - Redevelopment potential south of BNSF yards
    - ROW acquisition required for BNSF storage yard replacement

# Redondo Flyover to Fullerton Junction



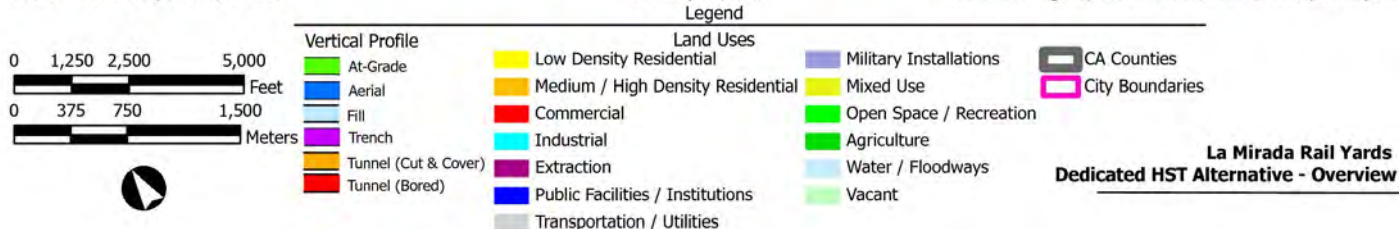
California High-Speed Train Project Los Angeles to Anaheim Project EIR/EIS



Source: STV Incorporated, AE LLC

January 29, 2010

California High-Speed Train Alternatives Analysis Report



# Redondo Flyover to Fullerton Junction



California High-Speed Train Project

Los Angeles to Anaheim Project EIR/EIS



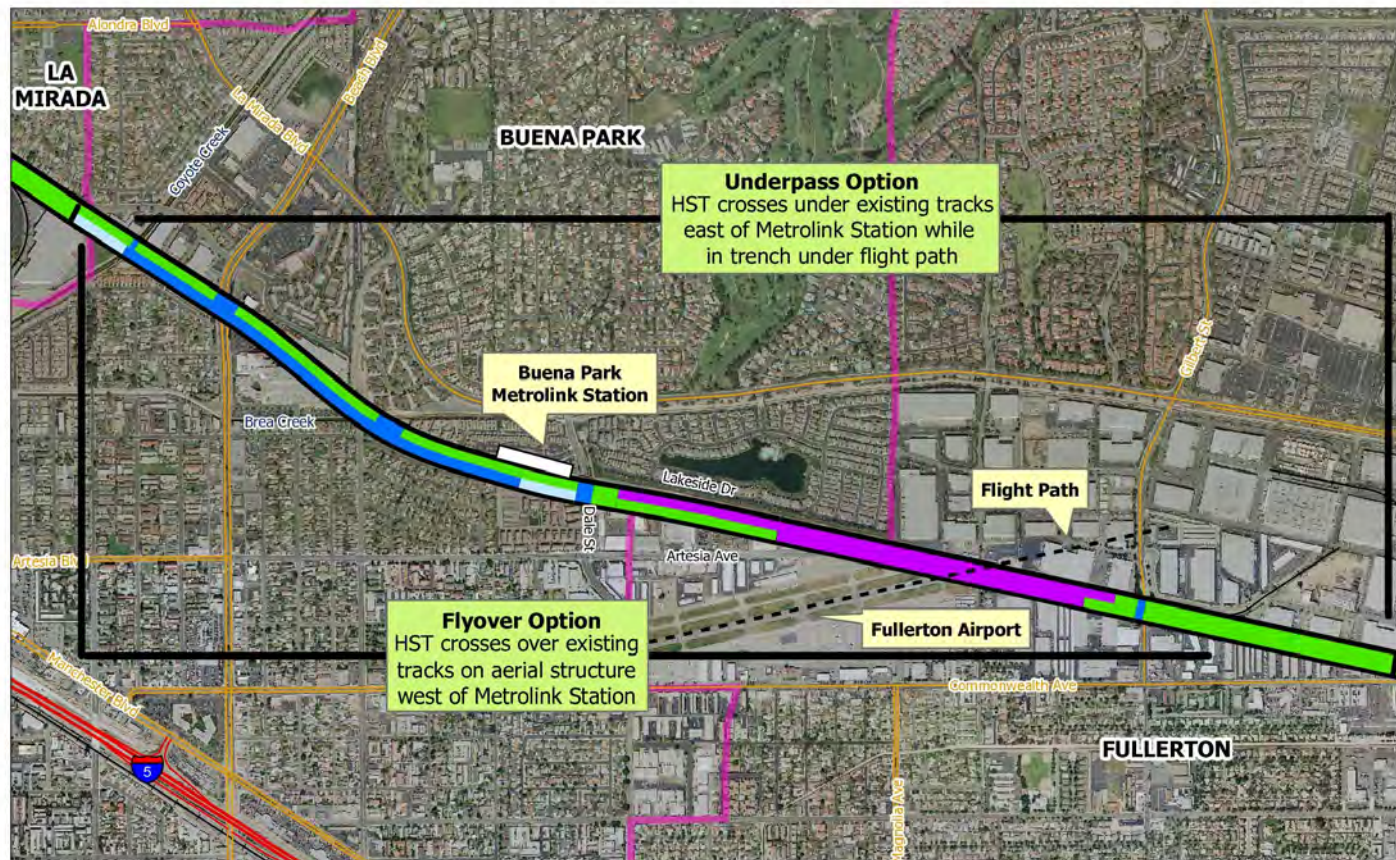
- Options Examined with Cities
  - Buena Park – At Grade on north side of BNSF
    - Metrolink Station relocation
    - Duck under BNSF at the end of Fullerton Airport runway
    - Limited ROW acquisition west of Beach Blvd
  - Fullerton - At Grade on south side of BNSF
    - ROW acquisition from airport to station – no residential
    - Station located across Harbor and south of BNSF
    - Connection to Fullerton Transportation Center
    - Impacts to Walnut Street
    - ROW acquisition required inside of curve to Anaheim – no residential

# Redondo Flyover to Fullerton Junction



California High-Speed Train Project

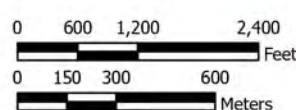
Los Angeles to Anaheim Project EIR/EIS



Source: STV Incorporated, AE LLC

January 29, 2010  
Legend

California High-Speed Train Alternatives Analysis Report



## Vertical Profile

- At-Grade
- Aerial
- Fill
- Trench
- Tunnel (Cut & Cover)
- Tunnel (Bored)

## Land Uses

- Low Density Residential
- Medium / High Density Residential
- Commercial
- Industrial
- Extraction
- Public Facilities / Institutions
- Transportation / Utilities

- Military Installations
- Mixed Use
- Open Space / Recreation
- Agriculture
- Water / Floodways
- Vacant

- City Boundaries

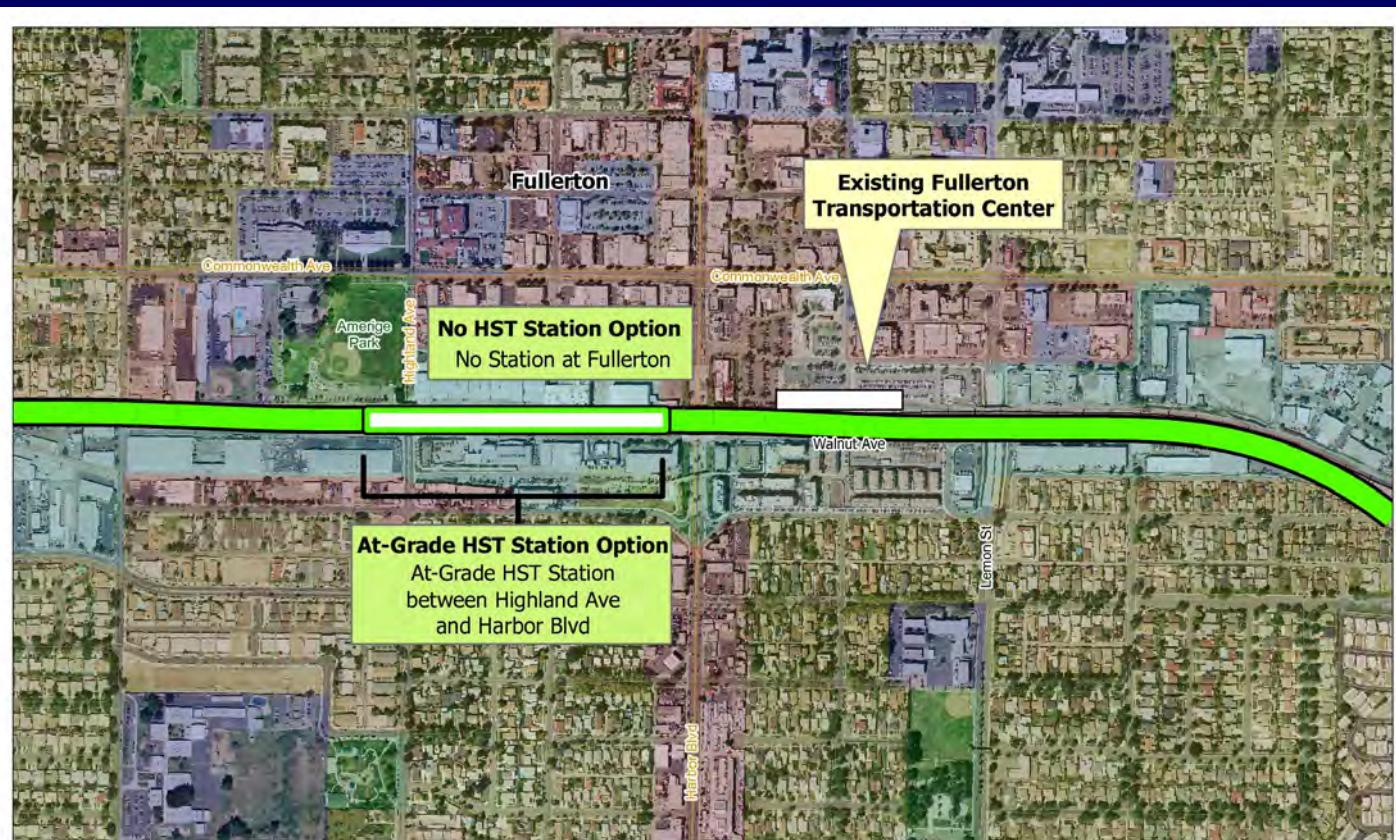
**Buena Park/Fullerton Airport  
Dedicated HST Alternative - Overview**

# Redondo Flyover to Fullerton Junction



California High-Speed Train Project

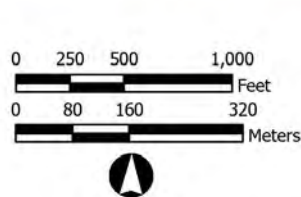
Los Angeles to Anaheim Project EIR/EIS



Source: STV Incorporated, AE LLC

June 16, 2010  
Legend

California High-Speed Train Alternatives Analysis Report



Vertical Profile		Land Uses	
At-Grade	Green	Low Density Residential	Yellow
Aerial	Blue	Medium / High Density Residential	Orange
Fill	Light Blue	Commercial	Red
Trench	Purple	Industrial	Cyan
Tunnel (Cut & Cover)	Orange	Extraction	Magenta
Tunnel (Bored)	Red	Public Facilities / Institutions	Blue
		Transportation / Utilities	Grey
		Military Installations	Purple
		Mixed Use	Yellow
		Open Space / Recreation	Green
		Agriculture	Light Green
		Water / Floodways	Light Blue
		Vacant	Light Green

**Fullerton Station**  
**Consolidated Shared-Track - Overview**

# Fullerton Junction to ARTIC



California High-Speed Train Project Los Angeles to Anaheim Project EIR/EIS



- Options Examined with Cities
  - Anaheim – At Grade on south/west side of BNSF
    - Four tracks necking down to two tracks through 50' ROW
    - Three tracks south of 50' ROW into ARTIC
    - Two HST platforms under SR – 57
    - ROW acquisitions required for grade separations
    - Rolling Stock Maintenance Facility
      - ROW acquisition required – no residential

# Fullerton Junction to ARTIC

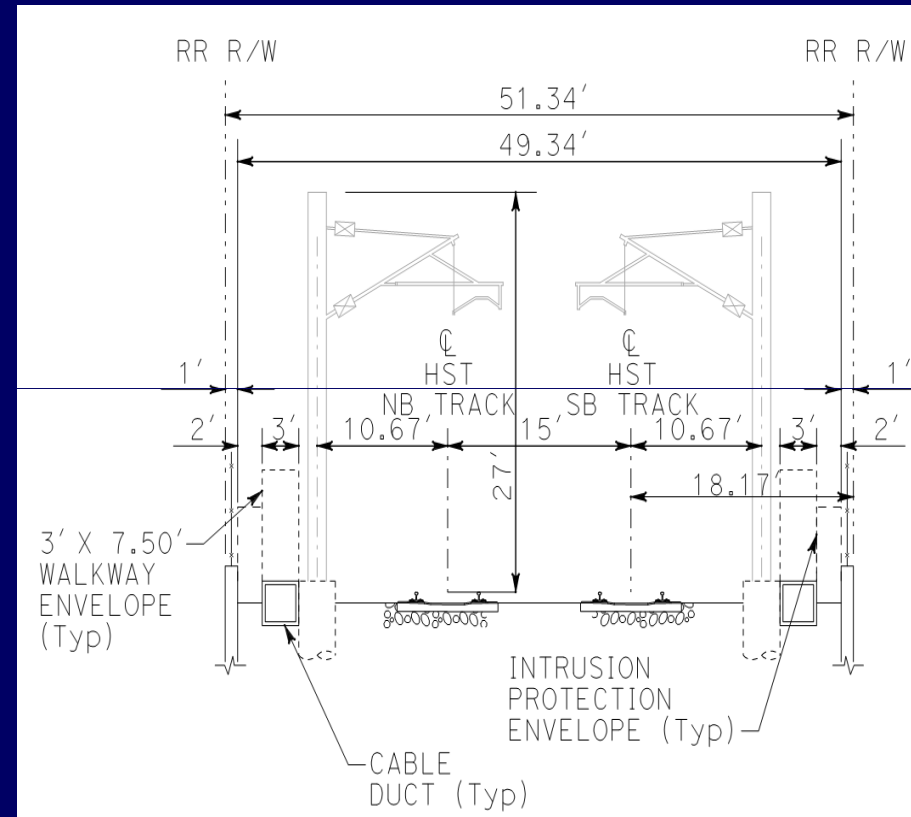


California High-Speed Train Project

Los Angeles to Anaheim Project EIR/EIS



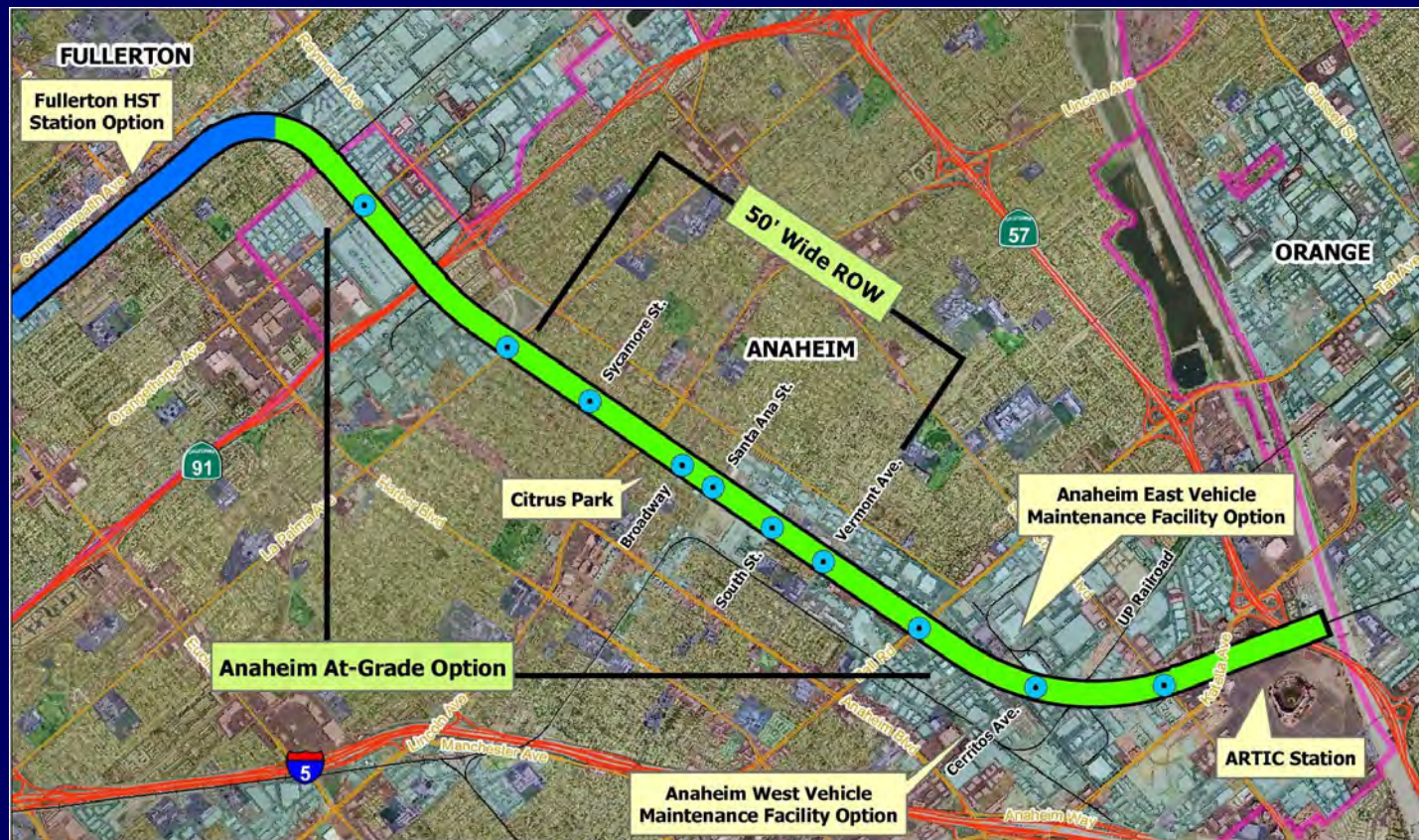
- Fullerton to Anaheim
  - Shared Track, two tracks within 50' ROW
  - Temporal Separation of Freight



# Fullerton Junction to ARTIC



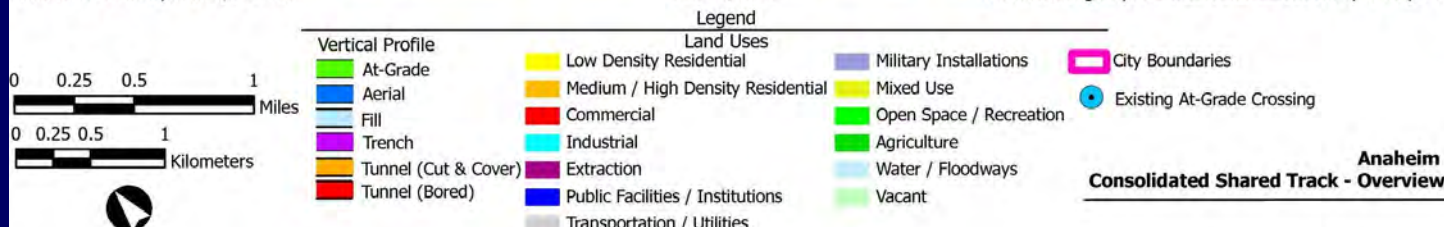
California High-Speed Train Project Los Angeles to Anaheim Project EIR/EIS



Source: STV Incorporated, AE LLC

June 4, 2010

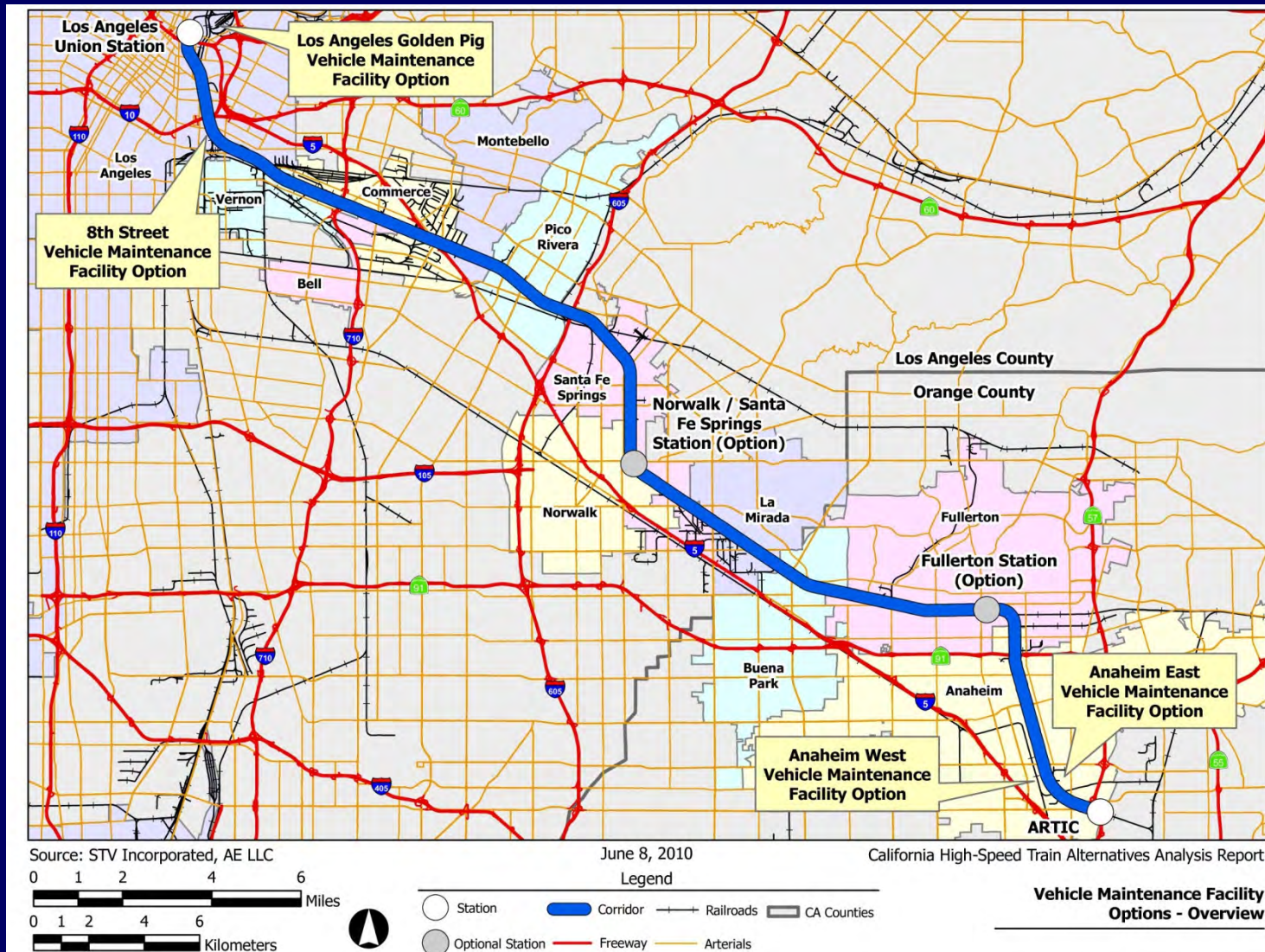
California High-Speed Train Alternatives Analysis Report



# VMF Options



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# VMF Options



California High-Speed Train Project

Los Angeles to Anaheim Project EIR/EIS



- Options Examined:
  - Los Angeles Golden Pig
  - Anaheim West
  - Anaheim East
- Recommended to Carry Forward:
  - Anaheim West
- Recent Option still being Vetted
  - Los Angeles 8<sup>th</sup> Street
    - Requires 8 storage tracks in Anaheim